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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,092	11/09/2005	Markus Oles	280378US0PCT	4755

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EXAMINER	
LIGHTFOOT, ELENA TSOY	

ART UNIT	PAPER NUMBER
1715	

NOTIFICATION DATE	DELIVERY MODE
04/07/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/556,092	OLES ET AL.	
	Examiner	Art Unit	
	ELENA Tsoy LIGHTFOOT	1715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *4 and 5* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 6-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

Amendment filed on March 30, 2011 has been entered. Claim 22 has been cancelled. Claims 1-21 are pending in the application. Claims 4-5 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims examined on the merits are 1-3, and 6-21.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Rejection of claims 1-3, and 6-22 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Rejection of claims 1-3, and 6-22 under 35 U.S.C. 103(a) as being unpatentable over Nun et al (US 20020150724) has been withdrawn due to amendment.

5. Rejection of claims 1-3, and 6-22 under 35 U.S.C. 103(a) as being unpatentable over Nun et al '724, as applied above, and further in view of Baumann et al (WO01/74739) has been withdrawn due to amendment.

6. Claims 1-3 and 6-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nun et al (US 20020150724) in view of Inokuchi et al (US 5411761), further in view of Jenkner et al (US 20020192385).

Nun et al is applied here for the same reasons as in the previous Office Actions.

As to current amendment, Nun et al discloses that the particles for generating the self-cleaning surfaces preferably have fissured structures and hydrophobic properties. The particles may themselves be hydrophobic, e.g. particles comprising PTFE, or the particles used may have been hydrophobicized. (See P34). The particles to be hydrophobicized include fumed silicates or silicas, in particular Aerosils, minerals, such as magadiite, Al_2O_3, SiO_2, TiO_2, ZrO_2 (See P32). Nun et al further teaches that it can be advantageous to use particles treated with at least one compound from the group consisting of the alkylsilanes, alkyldisilazanes, or perfluoroalkylsilanes (See P46). Thus, Nun et al does not limit hydrophobicizing silanes to alkylsilanes, alkyldisilazanes, or perfluoroalkylsilanes, and thus, Nun et al does not exclude hydrophobicizing silanes other than alkylsilanes, alkyldisilazanes, or perfluoroalkylsilanes.

Therefore, any compound capable of forming a hydrophobic coating on surfaces of fine particles of Al_2O_3, SiO_2, TiO_2, ZrO_2 would be suitable for producing self-cleaning surfaces.

Nun et al fails to teach that oligomerized cocondensate of 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyltriethoxysilane and 3-amino-propyltriethoxysilane is used for hydrophobicization of the particles (Claim 1).

Inokuchi et al teaches that it is known in the art to use trialkoxysilanes of general formula $R^1Si(OR^2)_3$ (See column 3, lines 19-24) singly or as a mixture of two for hydrophobicization of titanium oxide (TiO_2) fine particles (See column 3, lines 50-60), wherein R^1 represents a monovalent organic group having at least one group of an amino group and halogen atoms, e.g. groups in which part or all of the hydrogen atoms of the monovalent groups have been replaced with a halogen atom(s), and R^2 represents an C1-C6 alkyl group such as an ethyl group (See column 3, lines 24-37) such as N-(β-aminoethyl)-γ-aminopropyltrimethoxysilane, 3,3,3-trifluoropropyltrimethoxysilane, 3,3,4,4,5,5,6,6,6-nonafluorohexyltrimethoxysilane, and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyltrimethoxysilane (See column 3, lines 40-49). In other words, Inokuchi et al teaches that trialkoxysilanes of general formula $R^1Si(OR^2)_3$ that include among others γ-aminopropyltrimethoxysilane and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyltriethoxysilane may be used singly or as a mixture of any two for hydrophobicization fine TiO_2 particles.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyltriethoxysilane in combination with any other trialkoxysilane of general formula $R^1Si(OR^2)_3$, e.g. γ-aminopropyltrimethoxysilane, for coating fine metal oxide particles in Nun et al instead of 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyltriethoxysilane alone with the expectation of providing the desired hydrophobicization of the fine metal oxide particles, as taught by Inokuchi et al.

Inokuchi et al does not explicitly disclose that 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyltriethoxysilane is mixed with 3-amino-propyltriethoxysilane. Inokuchi et al fails to teach that oligomer of said mixture is used for hydrophobicization of the fine metal oxide particles (Claim 1).

Jenkner et al teaches that Dynasilan compounds such as Dynasilan 8261 (tridecafluorooctyltriethoxysilane) (See P37), Dynasilan 8850 (dimers, trimers, tetramers, i.e. oligomerized condensate of tridecafluorooctyltriethoxysilane) (See P38), Dynasilan 8262 (tridecafluorooctyltriethoxysilane in ethanol) and Dynasilan 8810 (aqueous solution of an oligomerized cocondensate of 3,3,4,4,5,5,6,6,7,7,8,8,8 -tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane) (See P40) may be used for coating pre-treated polymeric surfaces (See P33) to provide hydrophobic, oleophobic and dirt repellent properties to the coated surface (See P30-31). The polymeric surfaces may be pre-treated either by plasma (See P20) or by first covering the surfaces with metal oxides such as Al_2O_3, ZrO_2, SiO_2 in order to firmly attach the corresponding organofluorosilanes to the polymeric surfaces (See P6).

In other words, Jenkner et al teaches that tridecafluorooctyltriethoxysilane or an oligomer of tridecafluorooctyltriethoxysilane or oligomerized cocondensate of tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane may be used for providing hydrophobic, oleophobic and dirt repellent coatings on metal oxide surfaces. Obviously, non-oligomerized mixture of tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane may also be used for providing hydrophobic, oleophobic and dirt repellent coatings on metal oxide surfaces since Jenkner et al teaches that a fuorosilane is functionally equivalent to an oligomer of the fuorosilane.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used oligomerized cocondensate of tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane for coating fine metal oxide particles in Nun et al in view of Inokuchi et al instead of a mixture of non-oligomerized tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane with the expectation of providing the fine metal oxide particles with desired hydrophobic, oleophobic and dirt repellent properties since Jenkner et al teaches that a fuorosilane is functionally equivalent to an oligomer of the fuorosilane, and since Jenkner et al further teaches that oligomerized cocondensate of tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane is suitable for providing metal oxide surfaces with hydrophobic, oleophobic and dirt repellent properties.

It is the Examiner's position that particles coated with Dynasilan 8810 would provide self-cleaning properties in addition to hydrophobic, oleophobic and dirt repellent properties because the coated particles have fissured structures and hydrophobic properties, as required by Nun et al (See P34, lines 1-3).

It is the Examiner's position that the surfaces in Nun et al in view of Jenkner et al would have self-cleaning, oleophobic lipophobic and lactophobic properties inherently since the process of Nun et al in view of Inokuchi et al and Jenkner et al would be substantially identical to that of claimed invention.

Moreover, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See Ex parte Obiaya, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

7. Claims 1-3 and 6-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nun et al (US 20020150724) in view of Jenkner et al (US 20020192385).

Nun et al is applied here for the same reasons as in the previous Office Actions.

As to current amendment, Nun et al discloses that the particles for generating the self-cleaning surfaces preferably have fissured structures and hydrophobic properties (See P34, lines 1-3). Nun et al further teaches that it can be advantageous to use particles treated with at least one compound from the group consisting of the alkylsilanes, alkyldisilazanes, or perfluoroalkylsilanes (See P46). Thus, Nun et al does not limit hydrophobicizing silanes to alkylsilanes, alkyldisilazanes, or perfluoroalkylsilanes, and thus, Nun et al does not exclude hydrophobicizing silanes other than alkylsilanes, alkyldisilazanes, or perfluoroalkylsilanes.

Therefore, any compound capable of forming a hydrophobic coating on surfaces of fine particles of Al_2O_3, SiO_2, TiO_2, ZrO_2 would be suitable for producing self-cleaning surfaces.

Nun et al fails to teach that oligomerized cocondensate of 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyltriethoxysilane and 3-amino-propyltriethoxysilane is used for hydrophobicization of the particles (Claim 1).

Jenkner et al teaches that Dynasilan compounds such as Dynasilan 8261 (tridecafluorooctyltriethoxysilane) (See P37), Dynasilan 8850 (dimers, trimers, tetramers, i.e. oligomerized condensate of tridecafluorooctyltriethoxysilane) (See P38), Dynasilan 8262 (tridecafluorooctyltriethoxysilane in ethanol) and Dynasilan 8810 (aqueous solution of an oligomerized cocondensate of 3,3,4,4,5,5,6,6,7,7,8,8,8 -tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane) (See P40) may be used for coating pre-treated polymeric surfaces (See P33) to provide hydrophobic, oleophobic and dirt repellent properties to the coated surfaces (See

P30-31). The polymeric surfaces may be pre-treated by first covering the surfaces with metal oxides such as **Al_2O_3, ZrO_2, SiO_2** in order to firmly attach the corresponding organofluorosilanes to the polymeric surfaces (See P6).

In other words, Jenkner et al teaches that either tridecafluorooctyltriethoxysilane (Dynasilan 8262) or an oligomerized cocondensate of tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane (Dynasilan 8810) may be used for providing hydrophobic, oleophobic and dirt repellent coatings on metal oxide surfaces.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used oligomerized cocondensate of tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane (Dynasilan 8810) for coating fine metal oxide particles in Nun et al instead of Dynasilan 8262 with the expectation of providing the fine metal oxide particles with desired hydrophobic, oleophobic and dirt repellent properties since Jenkner et al teaches that either Dynasilan 8262 or an oligomerized cocondensate of tridecafluorooctyltriethoxysilane and 3-aminopropyltriethoxysilane may be used for providing hydrophobic, oleophobic and dirt repellent coatings on metal oxide surfaces.

It is the Examiner's position that particles coated with Dynasilan 8810 would provide self-cleaning properties in addition to hydrophobic, oleophobic and dirt repellent properties because the coated particles have fissured structures and hydrophobic properties, as required by Nun et al (See P34, lines 1-3).

It is the Examiner's position that the surfaces in Nun et al in view of Jenkner et al would have self-cleaning, oleophobic lipophobic and lactophobic properties inherently since the process of Nun et al in view of Jenkner et al would be substantially identical to that of claimed invention.

Moreover, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See Ex parte Obiaya, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

WO01/74739 to Baumann et al is cited here to show that tridecafluoroctyltriethoxysilane and oligomers thereof (Dynasilanes® produced by Sivento Chemie Rheinfelden GmbH) may be used as hydrophobizing agent for coating microstructured surface to provide a self-cleaning surface (See column 6, lines 36-39 of US 6,872,441 of the same patent family).

Response to Arguments

9. Applicant's arguments with respect to claims 1-3 and 6-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELENA Tsoy LIGHTFOOT whose telephone number is (571)272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1715

April 4, 2011

/Elena Tsoy Lightfoot/